Art Axworthy (A.E. Axworthy) Papers. List from: http://www.ntis.gov/search/index.aspx

AD382340	**Engineering Property Data on Rocket Propellants.** . The results of the initial 12-month period of the current 24-month program on the analytical and experimental characterization of the physical properties of selected liquid propellants are presented in three phases. In Phase I, a continuous review of the ... Author: M. T. Constantine K. J. Youel A. Axworthy J. Gerhauser J. V. Hamilton Year: 1967
AD488068	**Methods for Elimination of Corrosion Products of Nitrogen Tetroxide.** A 12-month program has been initiated to ascertain methods for the elimination of the corrosion products in N2O4 (iron-nitrate-containing species) which are responsible for the phenomenon of 'flow decay.' Flow decay is the term which has been given to the... Author: A. Axworthy J. Gerhauser C. Fujikawa S. Rodriquez Year: 1966
ADB003966	**Advanced Fuels for Chemical Lasers.** The report presents the results of a program to evaluate new reactants for the CW HF chemical laser. Reactants considered included the oxidizers F2, N2F4, NF3, ClF5, and ClF3; the precombustor fuels H2, N2H4, NH3, CS2, (CN)2, PF3, hydrocarbons, and perflu... Author: L. Forman A. Axworthy J. Hon G. Schneider Year: 1975
AD750900	**Stabilization of MHF-8 Monopropellant.** Long-term storability and decomposition kinetics of monopropellant formulations containing hydrazine, hydrazine azide, and ammonia were investigated. These propellants were found to be incompatible with steel alloys but quite compatible with 2319 aluminum... Author: A. E. Axworthy R. I. Wagner Year: 1972
PB250373	**Chemistry of Fuel Nitrogen Conversion to Nitrogen Oxides in Combustion.** The report gives results of an experimental and analytical investigation of chemical mechanisms involved in the conversion of fuel nitrogen to NOx in combustion. The pyrolysis of fossil fuels and model fuel nitrogen compounds was investigated, droplet and... Author: A. E. Axworthy G. R. Schneider M. D. Shuman V. H. Dayan Year: 1976
AD771537	**Photochemistry of Interhalogen Compounds of Interest as Rocket Propellants.** The chemical kinetics of the UV photochemical formations of ClF, ClF3, and ClF3O were investigated experimentally to obtain information relating to optimum conditions and the reaction mechanisms involved. An improved experimental apparatus was developed. ... Author: A. E. Axworthy R. D. Wilson K. H. Mueller Year: 1973

AD803130	**Methods for Elimination of Corrosion Products of Nitrogen Tetroxide.** Second quarter progress is reviewed on a 12-month program to ascertain methods for the elimination of the corrosion products in N2O4 (iron-nitrate-containing species) which are responsible for the phenomenon of 'flow decay.' Studies on the rate and mechan... Author: E. F. C. Cain A. E. Axworthy C. Fujikawa S. Rodriquez Year: 1966
AD808283	**Methods for Elimination of Corrosion Products of Nitrogen Tetroxide.** The dissolution of iron powder and 1018 carbon steel in anhydrous N2O4 at 30 and 50 C was studied. The concentrations of soluble iron reaches a final limit of less than 1 ppm in terms of iron which indicates that a solubility limit is reached and a comple... Author: E. F. C. Cain A. E. Axworthy C. Fujikawa S. Rodriguez Year: 1967
AD818872	**Research on Hydrazine Decomposition.** A 24-month program has been initiated to determine the stability of liquid hydrazine, its decomposition mechanism, and the effect of impurities on decomposition. Liquid-phase decomposition studies are being conducted in glass capillaries at 300, 350, and ... Author: A. E. Axworthy W. G. Nigh E. Welz Year: 1967
AD823201	**Research on Hydrazine Decomposition.** The kinetics of decomposition of liquid hydrazine was investigated at 171 C in a Pyrex reactor. The reaction occurred in the liquid phase indicating that vapor-phase decomposition is very slow under these conditions. The rate with propellant-grade hydrazi... Author: A. E. Axworthy W. G. Nigh E. Welz S. Cohz Year: 1967
AD823214	**Methods for Elimination of Corrosion Products of Nitrogen Tetroxide.** The deposition of a solid material from N2O4 in a propellant feed system has been studied in the laboratory and with an experimental flow bench. The solid material has been identified as NO(+)(Fe(NO3)4)(-). The conditions which cause the deposition were s... Author: E. F. C. Cain A. E. Axworthy J. Gerhauser C. Fujikawa S. Rodriguez Year: 1967
AD826121	**Research on Hydrazine Decomposition.** The kinetics of the decomposition of liquid hydrazine was investigated at 171C in Pyrex reactors. The decomposition rate was measured as a function of heating time for propellant-grade and purified hydrazines. The effects of added glass and metal surfaces... Author: A. E. Axworthy J. M. Sullivan S. Cohz Year: 1968
AD836753	**Research on Hydrazine Decomposition.** The kinetics of the decomposition of liquid hydrazine was investigated in sealed ampoules. The effects of temperature, hydrazine purity, and type of metal surface present were studied. (Author) Author: A. E. Axworthy J. M. Sullivan A. Passchier S. Cohz E. Welz Year: 1968

AD842500	**Research on Hydrazine Decomposition.** The kinetics of the decomposition of liquid hydrazine was investigated in sealed ampoules. The role of acidic impurities and methods for their removal were studied. (Author) Author: A. E. Axworthy J. M. Sullivan S. Cohz E. Welz Year: 1968
AD848135	**Research and Engineering Data on Inhibited N2O4.** The results are presented for three programs which were conducted to further develop and characterize 'inhibited N2O4' (INTO) which is N2O4 containing 1 to 3 weight percent FNO2. The purpose of the fluorine oxidizer is to react with any water which might ... Author: H. E. Dubb J. Fisher B. C. Neale J. Rosengard A. Axworthy Year: 1968
PB299377	**Reactions of Fuel Nitrogen Compounds under Conditions of Inert Pyrolysis.** The paper describes the pyrolysis of fossil fuels and model nitrogen compounds in helium in a small quartz plow reactor, as part of a study of the chemical mechanisms involved in the conversion of fuel-nitrogen compounds to nitric oxide (NO) during combus... Author: A. E. Axworthy V. H. Dayan G. B. Martin Year: 1977
PB82108358	**Fuel Decomposition and Flame Reactions in Conversion of Fuel Nitrogen to NOx.** The report describes an experimental and analytical research program conducted to provide information on the chemical phenomena involved in the conversion of air and fuel nitrogen to NOx. Under Task 1, Fuel Decomposition, early (preflame) reactions of fue... Author: A. E. Axworthy D. R. Kahn V. H. Dayan D. O. Woolery Year: 1978
N7115379	**Liquid Phase Reactions of Hypergolic Propellants Final Report.** Author: A. E. Axworthy S. E. Rodriguez Year: 1970